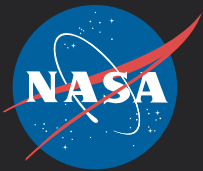


National Aeronautics and Space Administration



Xtra

A special publication of the NASA Dryden Flight Research Center X-Press, Edwards, California



New capability

Dryden Aircraft Operations Facility offers a one-stop shop for science missions and is key to developing strong partnerships.



At left, the DAOF management team includes, from left, Steve Schmidt, DAOF director; Ralph Anton, safety manager; Sandy Meske, business manager; Craig S. Griffith, facility manager and Robert Garcia, operations manager. Not present for the picture was Chuck Johnson, DAOF deputy director.

(NASA Photo ED09-0089-44 by Tom Tschida)

Expectations

The DAOF adds to Dryden, NASA capabilities

By Jay Levine
X-Press Editor

The size of the Dryden Aircraft Operations Facility is daunting from the outside and the expanse of hangar space is no less impressive inside.

The facility's open space – 210,000 square feet of hangar space and a like amount of office space on four floors on the building's north and south sides – was a key reason behind the Dryden expansion from its base at Edwards Air Force Base to nearby Palmdale, Calif.

"All of the hangars at Dryden would fit in Building 703. This facility represents a doubling of the hangar space we have available," said Steve Schmidt, the facility director. "The DAOF offers a new dimension to what Dryden offers and the location and facilities have the potential for partnerships and future projects that might not have existed without the Palmdale presence."

Intended to function as a NASA science mission one-stop shop for environmental, atmospheric and airborne astronomy research, the facility already includes a DC-8 flying laboratory that was relocated from Dryden's Edwards campus. It also includes the NASA 747SP Stratospheric Observatory for Infrared Astronomy aircraft that is undergoing preparations that are expected to lead



ED09 0089-86

NASA Photos by Tom Tschida

Above, an outside view of the DAOF is seen on a windy day. At left, the DAOF hangar houses the SOFIA, DC-8 and the ER-2 and NASA 747 Shuttle Carrier Aircraft, the latter two "visiting" for the event.

Cover, the DC-8, ER-2 and NASA 747 SCA are pictured. (NASA Photo ED09 0089-89 by Tom Tschida)

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NASA Photo by Tom Tschida

Above, the large expanse of hangar space was one of the enticements fueling development of the DAOF. Although the aircraft pictured are not all tenants, their placement offers some perspective on the new facility's size. The largest aircraft pictured is the Stratospheric Observatory for Infrared Astronomy NASA 747SP. From the left of the SOFIA and going clockwise are NASA's DC-8 Flying Laboratory, an ER-2 high-altitude aircraft, a 747 Shuttle Carrier Aircraft, the Gulfstream-III and the King Air.

A day at the DAOF



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ED09 0089-70

NASA Photo by Tom Tschida

Above, it was a good day to "fly" for two young people attending an April 9 open house at the DAOF. The SOFIA flight simulator was one of many featured attractions.

At left, a DC-8 staff member inside the aircraft dubbed the "flying laboratory" explains how the aircraft is used for science missions. (NASA Photo ED09 0089-60 by Tom Tschida)

For more information:

Contact Dryden
Office of Strategic
Communications
at 661-276-3449

For more information
on the DAOF check
out the Web site at
<http://www.nasa.gov/centers/dryden/daof/index.html>

More information on
Dryden aircraft and
missions is available
at <http://www.nasa.gov/centers/dryden/home/index.html>



ED09 0089-82

NASA Photo by Tom Tschida

Above, a dedication for the DAOF held April 9 also included an open house for Dryden employees, who were invited to visit and see the progress made on the facility. Jacques Vachon shows visitors the ER-2 cockpit.

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Dedication

DAOF capabilities are varied and valued

By Jay Levine
X-Press Editor and
Alan Brown
Dryden Public Affairs

A critical role will be filled in NASA Earth and space science when the Dryden Aircraft Operations Facility in Palmdale, Calif., is fully operational.

Local, regional, state and federal officials along with several hundred guests attended a dedication ceremony April 9 at the cavernous hangar and office complex adjacent to the U.S. Air Force Production Flight Test Complex, known also as Air Force Plant 42. The former aircraft assembly hangar and office structure is a Dryden satellite facility.

“This facility is unlike any other, providing the space we need to manage and operate a suite of unique aircraft,” said Dryden’s acting director, David D. McBride. “This facility is about more than aircraft. It will support a constant flow of people coming to the Antelope Valley – science campaigns by Earth

scientists and astrophysicists to gather the facts and increase our understanding of our planet and our universe.”

The DC-8 flying science laboratory and the Stratospheric Observatory for Infrared Astronomy NASA 747SP are based at the facility. Other aircraft will be relocated from the main Dryden campus when the DAOF is ready for them, including two ER-2 high-altitude aircraft and a Gulfstream III. The consolidation of these aircraft at one facility creates cost savings by the sharing of maintenance and fleet operations.

Missions launched from the facility will address a variety of science disciplines, including astronomy, climate change, tropical storm development, intercontinental pollution, earthquake and volcanic activity, vegetation and eco-system studies, and glacier dynamics and sea ice research in the Arctic and Antarctic.

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At left, at an April 9 dedication ceremony, local, state and federal representatives helped recognize key people. From left to right are Palmdale Mayor Jim Ledford; Shane Walter, City of Palmdale building and safety officer; Jerry McKee, Dryden deputy director of management; acting Dryden Center Director David D. McBride; U.S. Rep. Howard P. “Buck” McKeon of California’s 25th District; former Dryden Center Director Kevin L. Petersen; DAOF Director Steve Schmidt; Dryden Chief Counsel David Samuels; California state senator George Runner (R-17); and California state assemblyman Steve Knight (R-36).

NASA Photo ED09-0089-32 by Tom Tschida

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Steve Volz, associate director for Flight Programs for NASA’s Earth Science division in Washington, D.C., explained that the specialized science aircraft are critical in supplementing or validating information obtained from environmental satellites in orbit around the planet.

“We have over 15 satellites in orbit right now and seven more in development,” said Volz. “These are billion-dollar missions, multi-billion-dollar missions, or investments. The only way we can accomplish the groundbreaking Earth science from orbit is by a healthy and vigorous airborne sciences program.”

Volz noted that airborne science performs a variety of roles for NASA’s science missions, including calibration of instruments while flying under satellite orbital tracks.

“If we take a picture from space, it doesn’t mean anything if we don’t know it’s absolutely accurate. By under-flying with the DC-8, the ER-2 and the G-III, these carry calibration instruments that enable us to know what we are measuring from space – whether it’s global ice change, atmospheric chemistry change – are correct because we cannot go up in space and recalibrate our instruments,” he said.

Airborne science aircraft also fill other vital roles.

“They also provide a way to develop new instrumentation,” Volz said. “If it takes a billion dollars to launch a satellite, you want to make very certain that your instrument works properly. It can take up to 15 years to develop the technology to do that.

“These airplanes provide that necessary test bed to try out as many as 15 to 20 instruments at a time through different environments to see how the measurements work.

“What this program has shown is, the aircraft are integral to developing



Steve Volz

satellites. A few hundred thousand dollars on an airplane can save tens of millions of dollars on a satellite development activity. It [airborne science] really is a bridge to orbit for satellites.”

City of Palmdale Mayor James C. Ledford Jr. said establishment of the facility is the result of a collaborative partnership between NASA and several local and regional agencies, along with research institutions around the globe. He cited as an example the international partnership represented in the SOFIA program that is based at the facility.

“We’re going to have scientists from all over the world,” he added. “We need to be prepared to be hosts. We need to be prepared to learn what others might be bringing besides their technologies. They will be bringing their cultures. I find that to be very, very exciting.”

U.S. Rep. Howard P. “Buck” McKeon of California’s 25th congressional district, who said he couldn’t think of a more fitting home for a NASA research facility and laboratory than Palmdale.

“The Dryden Aircraft Operations Facility...will provide not only a great addition to Dryden’s mission capabilities, but also an incredible tool for collaborations among industry, universities, government and international partners,” McKeon said.

Speakers at the dedication also included California state senator George Runner (R-17), California state assemblyman Steve Knight (R-36) and Norm Hickling, Antelope Valley field deputy for Los Angeles County fifth district supervisor Michael D. Antonovich.

Thanks

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Simplex Grinnell
Souza
TACT

Thanks to Craig Griffith for developing this list.



ED09 0089-58

NASA Photo by Tom Tschida

Above, visitors to an employee open house were invited inside the DC-8 flying laboratory.



ED09 0089-46

NASA Photo by Tom Tschida

Above, U.S. Rep. Howard P. “Buck” McKeon of California’s 25 District, at right, talks with Dryden Director of Flight Operations Lawrence Davis, left, and another Dryden staff member at the DAOF dedication ceremony.



ED09-0089-59

NASA Photo by Tom Tschida

At left, Dryden pilot Herman Posada, left, discusses the remotely piloted Ikhana with visitors at an open house for Dryden employees.

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to missions that will redefine human knowledge of the heavens.

“Putting all of these airborne platforms in one place offers significant cost savings, efficiencies and effectiveness. It also provides advantages for visiting scientists to tap Dryden resources closer to Burbank and Los Angeles. It is easier access from the airports and reduces some of the complexities for our foreign visitors,” Schmidt said.

Dryden can have the best of both worlds – gaining tremendous hangar space that would have been complex to obtain at Edwards and remain just five to 10 minutes away from the restricted airspace that is sometimes necessary for specific Dryden missions, he said. The DAOF also has easy access to the adjacent taxiways and runways at Air Force Plant 42.

While operations are mirrors of each other from NASA’s main campus at Edwards Air Force Base and in Palmdale, the Palmdale facility offers some advantages to scientists and international partners, including closer access to hotels, restaurants and rental cars and shorter travel times, especially as they are preparing for a mission, Schmidt said.

In addition, more NASA science aircraft currently based at Dryden, including a G-III used as a research platform and two ER-2 high altitude aircraft, which are NASA variants of the U-2 spy planes used by the U.S. Air Force, will be based at the DAOF.

As the day nears when these science aircraft will be united under one roof, the potential for the DAOF and the work it can help NASA accomplish is exhibited by an aircraft temporarily located at the facility.

A NASA 747 Shuttle Carrier Aircraft needs a flap modification that in the past would have required

that it be shipped out for the work. However, because of the amenities at the DAOF – including an overhead crane – the work can be accomplished locally to save time, money and effort for the NASA Space Operations Mission Directorate.

“They can just send it over here and do it,” Schmidt explained.

That can-do attitude displayed by Schmidt and the DAOF management team and staff is a key reason that in about 18 months after work began, the facility was ready for a dedication ceremony, Schmidt said.

While it is difficult to get an idea as large as the DAOF off the ground, that’s what Dryden has historically accomplished for the agency. It was tough work, Schmidt admitted, but he added that blood, sweat, tears, spirited debates and tenacity have prevailed in creating not only a good environment for aircraft missions, but also for people.

Schmidt’s management team includes Chuck Johnson, DAOF deputy director; Craig S. Griffith, facility manager; Robert Garcia, operations manager; Ralph Anton, safety manager; and Sandy Meske, business manager.

Schmidt added that having available infrastructure at the Palmdale site was a key to the rapid build-up of the facility. But the facility, although it is still in development, has been the base of operations for five DC-8 missions, major work to the SOFIA mirror and preparations for the aircraft to fly open-telescope-door flights later this year.

“It is an interesting challenge to build a house while moving the furniture at the same time,” Schmidt said.

The task of preparing the DAOF for Dryden’s use essentially has been



ED05 111-1 **NASA Photo by Tom Tschida**
Alan Crocker works on a horizontal bandsaw at the DAOF Fabrication Shop, which in addition to machining also has capabilities for sheet-metal, composite and welding.

one of converting and modifying a former production facility into an operational base for science missions. The work included addition of labs, shops and infrastructure. Because the facility had not been used since the departure of the previous tenant, aerospace company SR Technics, work on even the basics was needed – fire systems, power and water – when Dryden signed the lease with Los Angeles World Airports Board of Commissioners in October 2007.

“Nothing happens without partners” in an effort like this, Schmidt said. The Los Angeles World Airports, the City of Palmdale, Air Force Plant 42, the Los Angeles County Fire Department and a number of state and federal government representatives have contributed to the facility’s development. Potential partnerships also are developing for sharing space and capabilities, Schmidt said.

An example of the partnerships is how City of Palmdale personnel were instrumental in helping Dryden officials secure the 20-year lease from LAWA, owner of the

property on which the DAOF is located.

NASA leases Bldg. 703, one of the five major buildings on the site, and about 16.2 acres as an aircraft operations facility to support a number of airborne science programs and the SOFIA.

Another mutual benefit of the Palmdale facility is for Dryden to be more integrated within the Antelope Valley population centers and providing revenue and jobs to the area with the expansion of Dryden capabilities at the DAOF, Schmidt said.

NASA’s investment exceeded \$6.5 million in facility modifications and upgrades and will include about \$1.4 million per year for the lease. LAWA invested about \$4 million in improvements, including items such as re-roofing Bldg. 703 and installing a new central utility plant.

About 150 Dryden civil service and contractor staff are located at the DAOF and that number can more than double when visiting scientists from around the world are based at the site while experiments or missions are prepared or in progress.